UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

MEMORANDUM:

To: Kable Bo Davis, MS, PM03

From: Rebecca Whalen, Ph.D., Entomologist

Secondary Review: Jennifer Saunders, PhD, Senior Biologist

Date: 6/8/2017

Subject: PRODUCT PERFORMANCE DATA EVALUATION RECORD (DER)

THIS DER DOES NOT CONTAIN CONFIDENTIAL BUSINESS INFORMATION

Note: MRIDs found to be **unacceptable** to support label claims should be removed from the data matrix.

DP barcode: 440433
Decision no.: Rereg
Submission no: Rereg
Action code: Rereg
Product Name: UltraTec DP 205 Insecticide
EPA Reg. No or File Symbol: 1021-2714
Formulation Type: Liquid spray
Ingredients statement from the label with PC codes included:

Pyrethrins	0.05%	PC code: 069001
Deltamethrin	0.02%	PC code: 097805

Application rate(s) of product and each active ingredient (lbs. or gallons/1000 square feet or per acre as appropriate; and g/m^2 or mg/cm^2 or mg/kg body weight as appropriate): One 6 fl. oz. container/60 ft^2. Hold can 12-18 inches from surface. Spray until surface is slightly wet. For use indoors against cockroaches, ants, spiders, centipedes, fleas and ticks apply as a genera surface spot or crack and crevice spray. For ants, spray around ant trails and around doors. For tick and fleas remove pet bedding and spray pet resting quarters. For spiders apply along baseboards and window and door frames. For bed bugs take bed apart and spray joints. For centipedes, scorpions and ticks apply around doors and windows. For ants, bed bugs, centipedes, cockroaches, fleas, spiders, ticks, chiggers, black flies, deer flies, horse flies, gnat, biting midges and wasps spray 1-3 seconds contacting insects directly. Outdoors, for pests on outside surfaces including ants, cockroaches, ticks and spiders spray foundation of building to 3 feet. For ants, cockroaches, centipedes, scorpions, spiders, spray insects directly. For ticks, spray areas where ticks are found. For ants, spray ant trails. For wasps and hornets spray individuals directly. For house flies, gnats and mosquitoes, spray outside of windows and door frames.

Use Patterns:

I. Action Requested: Reregistration efficacy review requested. MRIDs 46709501 44858201 44858202 44858203 44874701 44874702 44874703 44874704 44874705 44874706 44874708 44878001 44878502 44974704 44974705 45069301 45069302 45069303 45069304 45104203 45137601 45137602 45137603 45430201 47570901 48302901 48935601 48935602 48935603 and 48935604 are listed on the data matrix for this product and are reviewed here to

determine if efficacy claims against pests of public health significance are supported.

II. Background: Product specific data were called in for pyrethrins to support the reregistration of this product.

III. MRID Summary:

MRID 46709501. Residual activity of DeltaGard and Esbiol/DeltaGard water-based aerosols against German cockroaches

(1) **Methods:** The number of replicates used, the number of individuals tested, and control replication or use were not described therefore this study will not be reviewed.

(2) **Conclusion:** This study is **unacceptable** because the number of replicates and the number of individuals per replicate were not described and no controls were described.

MRID 44858201. Laboratory Evaluations of DeltaGard and Esbiol/DeltaGard Water-Based Aerosols as Direct Sprays against Ten Arthropod Pest Species

(1) non-GLP

(2) **Methods:** This study tested a 0.01% deltamethrin aerosol product, and a 0.02% deltamethrin and 0.05% Esbiol combination product as direct surface sprays against the following public health pests: southern fire ant, scorpions, and centipedes. The application rates ranged from 7.3 to 21.9 g per 5 replicates. Unknown numbers of test subjects were placed into 1 pint disposable plastic food storage containers with approximately 5 mm of sand in the bottom. Five replicates of each arthropod group were sprayed until thoroughly wet. Arthropods were scored for initial knockdown and mortality at 15, 30, 60 and 120 minutes and 24 hours. Moribund individuals were considered dead for counts.

(3) **Results:** Efficacy against southern fire ants and centipedes was over 90% at all timepoints from 15 minutes to 14 hours post application for both treatments. Efficacy against scorpions reached 100% at 60 minutes post application for the 0.01% deltamethrin product and 120 minutes post application for the deltamethrin and esbiol combination product.

(4) **Conclusion: Unacceptable.** This study does not support any efficacy claims because there is no untreated control, the rate of application is inconsistent and moribund individuals were considered dead.

MRID 44858202. Evaluation of SBA/DTM TetraPerm and PyraPerm WBA against German Cockroaches and Cat Fleas

(1) non-GLP

(2) **Methods:** This study tested the following formulations: ShopRite Ant & Roach Killer (0.5% chlorpyrifos); Hotshot Roach & Ant Killer (0.1% TLM, 0.05% BA, 1.0% MGK 264); TetraPerm (0.1% TTM, 0.25% PRM, 0.5% PB); TetraPerm (0.05% TTM, 0.125% PRM, 0.25% PB); PyraPerm (0.1% PYR, 0.2% PRM, 0.5% PB); 0.05% SBA, 0.02% DTM; .0.05% SBA, 0.01% DTM; 0.02% DTM; 0.01% DTM. Active ingredient abbreviations were not described. Control replication was not described. The products were applied directly to German cockroaches and cat fleas at a rate of 1 g per replicate of unknown area. For both species, each treatment was replicated three times with 10 individuals per replicate. Insects were not moved to clean containers after treatment. Mortality was assessed after 24 hrs.

(3) **Results:** All treatments resulted in 100% mortality of fleas and cockroaches after 24 hrs.

(4) **Conclusion:** This study is **unacceptable** because there was no control treatment and insects were not moved to clean containers within 4 hrs post-treatment. Also, a balanced study design is preferred, with at least 5 replicates of ten individuals each tested for both the treatments and the controls.

MRID 44858203. Performance of Esbiol/Deltamethrin Water-Based Aerosol Series against Cat Fleas and German Cockroaches

(1) non-GLP

(2) **Methods:** This study tested for knockdown and residual efficacy water-based aerosol products containing 0.01% and 0.02% deltamethrin, in addition to several other products containing different active ingredients. The other formulations tested were: 0.05% esbiol/0.02% deltamethrin; 0.1% esbiol/0.02% deltamethrin; 0.15% esbiol/0.02% deltamethrin; 0.01% deltamethrin; 0.02% deltamethrin; 0.01% tralomethrin/0.05% d-trans allethrin; 0.03% tralomethrin/0.055 d-trans allethrin; 0.05% pyrethrins/0.2% permethrin/0.25% MGK 264; 0.2% permethrin/0.2% pyrethrins/0.266% PBO. There was no untreated control treatment. To determine the efficacy of a direct spray against fleas, the products were applied directly to 5 cm diameter carpet pieces at a rate of 1 g per replicate (45.5 g product/ft2). For efficacy of a direct spray against German cockroaches, the products were applied directly to a substrate of unknown size at a rate of 1 g per replicate. For both species, each treatment was replicated three times with 10 individuals per replicate. Knockdown of fleas was recorded at each minute until 90% knockdown and mortality was assessed at 24 h post exposure. Knockdown of cockroaches was recorded at 30 second intervals until 90% knockdown occurred and mortality was assessed at 24 h post exposure. To test for residual efficacy against fleas, treated (1 g product/replicate) carpets were aged in the lab for 1, 2, and 3 months post treatment. Fleas were inoculated at 1, 2, and 3 months post application and then assessed for knockdown at 1 hour post exposure and mortality at 24 hours post exposure. To test residual efficacy against cockroaches, 1 g product/replicate was applied to vinyl and ceramic tiles of unknown size which were aged for evaluation at 1, 2, and 3 months post application. Cockroaches were exposed to treated ceramic tiles for 1 minute at 1 month post application, and 30 minutes at 2 and 3 months post application and on vinyl tiles at 1 and 2 months post application. Knockdown was measured as KT90 and mortality was assessed at 24 h post exposure.

(3) **Results:** In the direct spray treatments with deltamethrin, the KT90s for fleas was between 2.6 and 3.8 minutes and between 7 and 13 minutes for cockroaches. Mortality of both species was 100% at 24 hours post exposure. In the residual studies, deltamethrin killed less than 70% of fleas at 24 hours post exposure for all three months tested. Mortality of cockroaches at 24 hours post exposure to both deltamethrin treatments was over 90% during all three months. For observations at 15 minutes after exposure on the first month, knockdown of cockroaches was less than 20%, but knockdown at 30 minutes or 1 hour was over 90% for the both deltamethrin treatments except the 0.01% treatment at 3 months post application when knockdown was 87%.

(4) **Conclusion: Unacceptable.** This study is not acceptable because there was no control treatment, and the rate applied to ceramic and vinyl tile cannot be calculated because the size of the tiles was not reported.

MRID 44874701. Residual Evaluation of Water-Based Insecticides for the Control of German Cockroaches.

(1) non-GLP

(2) **Methods:** The study design consisted of four replicates with 10 German cockroach males per replicate. Several formulations were tested: 0.02% deltamethrin; 0.05% tralomethrin; 0.15% permethrin, 0.2% permethrin, 0.25% permethrin, 0.075% cypermethrin, 0.1% cypermethrin, 0.125% cypermethrin, 0.2% chlorpyrifos, 0.25% chlorpyrifos. Only the deltamethrin treatment will be reviewed here. Treatment was applied to 3.5” x 3.5” glass plates at a rate of 1 gal./1,000^2 and left to dry. Residual efficacy was tested on plates treated one day, seven days, 30 days, 10 weeks and 14 weeks previously. Cockroaches were places on treated plates for one minute then removed to an untreated surface to determine knockdown time and 24 hr mortality. No controls were described.

(3) **Results:** Exposure of German cockroaches to the 0.02% deltamethrin treated glass plates resulted in >90% mortality on glass treated 24 hrs, 1 week, 4 weeks, 10 weeks and 14 weeks previously.

(4) **Conclusion:** This study is **unacceptable** because no controls were used in the experiment.

MRID 44874702. Comparison of Deltamethrin RTU, Vikor RTU, InterCept, Empire 20, Ford's Dursban, Saga WP, Suspend SC and DeltaDust in Efficacy Tests and Residual Activity in Carpenter Ant Control.

(1) non-GLP

(2) **Methods:** This study tested an unknown rate of a 0.25% dilution of permethrin applied to vinyl tile and concrete block for residual efficacy against carpenter ants. The other formulations tested were 0.02% deltamethrin; 0.05% tralomethrin; 0.25% permethrin; 0.2% chlorpyrifos; 0.25% chlorpyrifos; 0.06% tralomethrin; 0.03% deltamethrin; 0.05% deltamethrin. Efficacy was evaluated at 1, 2, 4, 8, 12, and 16 weeks post application. There was no control treatment used in the study.

(3) **Results:** Exposure of carpenter ants to the vinyl tiles resulted in greater than 90% efficacy through 12 weeks post application, and 87% mortality at 16 weeks post application. Mortality of ants exposed to concrete blocks treated with permethrin was only greater than 90% at 1 week post application.

(4) **Conclusion:** This study is **unacceptable** because a control treatment was not included in the study, and because the rate of product application is unknown and cannot be compared to the label.

MRID 44874703. Evaluation of Residual Treatments of Deltamethrin RTU, Ford's Dursban, Empire 20, InterCept, Saga WP, Suspend SC, Vikor 26% and Vikor RTU on Concrete and Floor Tiles for the Control of Pharaoh Ants, Fire Ants and Crazy Ants.

(1) non-GLP

(2) **Methods:** The study design consisted of five replicates with 10 ants of each species per replicate. Formulations tested were: 0.02% deltamethrin; 0.05% tralomethrin; 0.15% permethrin; 0.2% permethrin; 0.25% permethrin; 0.1% cypermethrin; 0.06% tralomethrin; 0.03% deltamethrin; 0.2% chlorpyrifos; 0.25% chlorpyrifos. Pharaoh ants, fire ants, and crazy ants were exposed for an unknown period of time to vinyl floor tiles (5" x 5") and 15 cm diameter concrete plates that were treated with 0.25% formulation of permethrin at a rate of 1 gal/1000 ft^2. Residual evaluations were conducted at 1, 7, 30, 60, and 90 days. Control results were included but replication was not described.

(3) **Results:** For pharaoh ants, the 0.15% permethrin treatment resulted in >90% mortality on tile at 0 days post treatment and 7 days and 3 months post-treatment; and 0.2% permethrin treatment resulted in >90% mortality on tile at 0 days post treatment and 7 days post-treatment. Control pharaoh ants on tile had <10% mortality on 0 and 7 days post-treatment and >10% mortality at 3 months post-treatment. For pharaoh ants, the 0.15% permethrin treatment resulted in >90% mortality on concrete at day 0 and 3 months post-treatment; and 0.2% permethrin treatment resulted in >90% mortality on concrete at 0 days and 3 months post-treatment. Control pharaoh ants on concrete had <10% mortality on all days post-treatment. For fire ants, the 0.15% and 0.20% permethrin treatment resulted in 100% mortality on tile treated 0 days to 3 months previously. Control fire ants on tile had >10% mortality at 0 days, seven days and 2 months post-treatment. For fire ants, the 0.15% permethrin treatment resulted in >90% mortality on concrete at 0 days, 7 days, 1 month post-treatment; and 0.2% permethrin resulted in >90% mortality on concrete at 0 days and seven days and 1 and 3 months post-treatment. Control fire ants on concrete had >10% mortality at 0 days post-treatment and 2 months post-treatment.

(4) **Conclusion:** This study is **unacceptable** to support efficacy claims against pharaoh ants and fire ants because control replication was not described and exposure times were not given. Insects should be moved to clean containers within 4 hrs post-treatment.

MRID 44874704. Knockdown and Residual Activities of Deltamethrin 0.01% RTU and Esbiol/Deltamethrin WBA Against Red Imported Fire Ants, *Solenopsis invicta*, Pharaoh Ant, *Monomorium pharaonis*, Littler Black Ant, *Monomorium minimum*, False honey Ant, *Prenolepsis imparis*, and *Tetramorium bicarinatum*

(1) non-GLP

(2) **Methods:** This study tested the efficacy of water as a control treatment, a 0.01% deltamethrin RTU product at 1.17 g product/replicate (1.74 g deltamethrin/1000 ft2), and a esbiol/deltamethrin combination product with unknown percentages of the active ingredients at 0.53 g product/replicate against two ant species considered public health pests, fire ants and pharaoh ants. Each treatment was applied directly to three replicates of 20 individuals on vinyl tiles for each ant species. Ants were evaluated for knockdown and mortality at 5, 10, 15, and 30 minutes post application. The vinyl tiles were saved and used to evaluate residual efficacy of the treatments at one week and one month post treatment.

(3) **Results:** Within 20 minutes after initial direct treatment of fire ants and pharaoh ants, all ants were dead. In residual tests one week and 30 days after treatment, all ants were dead within 60 minutes of exposure. Control mortality was 0 for all species in all tests.

(4) **Conclusion:** This study is **acceptable** and supports direct contact kill claims against fire ants and pharaoh ants and claims of residual efficacy for the proposed product up to 30 days after treatment on nonporous surfaces.

MRID 44874705. Direct Spray Performance of Deltamethrin SC RTU Formulations Against German Cockroaches, Carpenter Ant, and Crickets.

(1) non-GLP

(2) **Methods:** This study assessed the efficacy of a direct application against German cockroaches and carpenter ants of seven different insecticide treatments including a 0.25% permethrin RTU product and an untreated control treatment. Other formulations tested were 0.01% deltamethrin; 0.02% deltamethrin; 0.03% deltamethrin; 0.25% permethrin; 0.50% chlorpyrifos, 0.05% bioallethrin, 0.16% MGK 264, 0.10% piperonyl butoxide; 0.25% chlorpyrifos. Each replicate was sprayed with 1 g of product/replicate. Each treatment was replicated three times, with 10 individuals for German cockroaches and 5 individuals for carpenter ants. Immediately after treatment, cockroaches and ants were transferred to clean containers. Knockdown was assessed every 2 minutes for the first 15 minutes and then every five minutes thereafter until all individuals were knocked down. Mortality was assessed at 24 hrs post treatment.

(3) **Results:** Mortality of German cockroaches and ants treated with 0.01% or 0.02% deltamethrin products was 100% at 24 hours post application. For the 0.01% deltamethrin products the KT90 for cockroaches was 26 minutes and for ants was 19 minutes. For the 0.02% deltamethrin products the KT90 for cockroaches was 35 minutes and for ants was 17 minutes. No control mortality was observed for either species.

(4) **Conclusion: Unacceptable.** This study does not support claims against carpenter ants or German cockroaches because the number of individuals per replication was not adequate. Typically, a balanced study design is preferred, with at least 5 replicates of ten individuals each tested for both the treatments and the controls.

MRID 44874706. Direct Spray Performance of Deltamethrin SC RTU Formulations against German Cockroaches, Carpenter Ant, and Crickets

(1) **Conclusion: Extraneous Submission.** The study in the MRID is the same study as in MRID 44874705, therefore this MRID was not reviewed.

MRID 44874707. Evaluation of Residual Effects of Water-Based Insecticides Against Cat Fleas

(1) non-GLP

(2) **Methods:** The study design consisted of single replicates with 10 adult cat fleas of mixed sex in each replicate. Formulations tested include the following: A. 0.02% deltamethrin RTU; B. Vikor, 0.05% tralomethrin; C. Intercept, 0.15%, 0.2% and 0.25% permethrin; D. Vikor 26% concentrate, 0.075%, 0.1% and 0.125% cypermethrin; E. Ford's Dursban EC, 0.25% chlorpyrifos; and F. Empire 20, 0.2% chlorpyrifos MC. A 5-cm diameter piece of carpet was placed in a soil sieve and sprayed with insecticide at a rate of 1 gal/1000 ft^2 with a compressed air spray nozzle. The carpet was then placed in a glass cylinder and fleas were transferred to carpet. Knockdown was recorded every

minute until 90% of fleas were knocked down. Mortality was calculated at 24 hrs. Treated carpets were aged and residual effects recorded at one week and one, two and three months. No controls were described.

(3) **Results:** Only results from 0.02% deltamethrin formulation will be described. Results from the deltamethrin treatment were not included in the results table. The graphs were unclear in a black and white format so the results for the deltamethrin treatment could not be determined.

(4) **Conclusion:** This study is **unacceptable** because no controls were used, individuals were not removed to untreated containers and were therefore exposed to treatment for 24 hrs, which is unrealistic in a real world scenario, and there was no replication. The study design should have an equal number of treated and untreated replicates and tests should consist of five replicates of ten individuals unless otherwise justified. Finally, results for the deltamethrin treatment were not included in a way that could be easily interpreted by the reviewer.

MRID 44874708. Residual Performance of Deltamethrin SC RTU vs. Commercial Products against House Flies.

(1) non-GLP

(2) **Methods:** This study assessed the residual efficacy against house flies of seven different insecticide treatments including a 0.25% permethrin product and an untreated control treatment. The other formulations tested were 0.01% deltamethrin; 0.02% deltamethrin; 0.03% deltamethrin; 4.75% DTM SC (abbreviations not described); 0.25% permethrin; 0.5% chlorpyrifos, 0.05% bioallethrin, 0.16% MGK 264, 0.1% piperonyl butoxide; 0.25% chlorpyrifos. There were three replicates with an unknown number of flies in each replicate. One gram of product was applied to ceramic (121 cm^2) or concrete surfaces (153.9 cm^2). Concrete and ceramic tiles were aged for five months in the laboratory, and then an unknown number of house flies were held on the surfaces under a petri dish for one minute. After one minute, house flies were placed in a clean container and knockdown was recorded at 30 and 60 minutes post exposure and mortality was recorded at 24 hours post exposure. The study states “controls were kept.”

(3) **Results:** Mortality of house flies exposed to ceramic tiles treated with the 0.01% deltamethrin product was 81% and on concrete tiles was 48%. Mortality of house flies exposed to ceramic tiles treated with the 0.02% deltamethrin product was 46% and on concrete tiles was 77%. Greater than 90% knockdown of house flies on both treated surfaces was observed for the 0.01% and 0.02% deltamethrin products at 30 and 60 minutes, except on concrete tiles treated with the 0.01% deltamethrin product at 30 minutes past exposure when knockdown was 43%. No mortality was observed in the control treatment.

(4) **Conclusion: Unacceptable.** This study does not support efficacy claims against house flies because mortality did not reach 90% for either the 0.01% or 0.02% products, and the number of house flies per replicate is unknown. A balanced study design is preferred, with at least 5 replicates of ten individuals each tested for both the treatments and the controls.

MRID 44878001. Evaluation of 0.05% Esbiol/0.02% Deltamethrin and 0.01% Deltamethrin Water-Based Aerosols Applied to Glass Plates Against Boxelder Bugs, *Leptocoris trivattatus*, Mosquitoes, *Aedes aegypti*, and Deer Ticks, *Ixodes scapularis*

(1) non-GLP

(2) **Methods:** This study tested the efficacy against deer ticks and mosquitoes of a 0.01% deltamethrin water-based aerosol product and a 0.05% Esbiol/0.02% deltamethrin product applied to glass plates. There was no untreated control group. The 0.01% deltamethrin product was applied at 0.92 g deltamethrin/1000 ft2 to two replicates for each
species, 0.092 g deltamethrin/1000 ft2 to two replicates for mosquitoes, and 0.23 g deltamethrin/1000 ft2 to two replicates for deer ticks. After application, 10 nymphal deer ticks were placed directly onto each plate for 1 minute after which ticks were placed into clean containers and observed for mortality at 10 minutes and 24 hours post exposure. For mosquitoes, 17-20 unfed adult female *Aedes aegypti* mosquitoes were held on the treated glass plate for 2 minutes and then transferred to clean containers and observed for knockdown and mortality at 10 min., 30

min., 12 hours, and 24 hours post exposure.

(3) **Results:** All nymphal deer ticks exposed to deltamethrin treated plates were dead within 10 minutes of exposure. On plates treated with 0.092 g deltamethrin/1000 ft2 mosquito mortality was 64.7% at 12 hours post exposure and was not recorded at 24 hours post exposure. On plates treated with 0.92 g deltamethrin/1000 ft2, 90% knockdown of mosquitoes occurred at 10 minutes post exposure and 90% mortality was recorded at 12 hours post exposure.

(4) **Conclusion: Unacceptable** because there was no untreated control, replication was not adequate, and adult ticks were not tested.

MRID 44878502. Laboratory Performance of DeltaGard HPC as a Direct Spray against Oriental Cockroaches, Termites (*Reticulitermes flavipes*), Ants (*Crematogaster spp.*), Rice Weevils and Lesser Grain Borers.

(1) non-GLP

(2) **Methods:** In this study, a 0.01% deltamethrin ready to use product was tested for efficacy of a direct application of 1 g product (0.0001 g deltamethrin/replicate of unknown size) against Oriental cockroaches and termites (*Reticulitermes flavipes*). There were five replicates for both species and each replicate consisted of 5 cockroaches or 10 termites. Immediately after application, insects were moved to clean containers and observed for knockdown at 15, 30, and 60 minutes after treatment. Mortality was assessed at 24 hours post treatment and 5 days post treatment. There was no untreated control in the experiment.

(3) **Results:** At 15 minutes post treatment 94% of termites were knocked down; however, for cockroaches > 90% knockdown did not occur until 60 minutes post treatment. At 24 hours post treatment mortality of cockroaches and termites was 100%.

(4) **Conclusion: Unacceptable** because there was no untreated control treatment.

MRID 44974704. Performance of 0.01% DeltaGard Water-Based Aerosol Direct Sprays against American, Oriental cockroaches and stored product pests

(1) non-GLP

(2) **Methods:** In this study, a 0.01% deltamethrin ready to use product and an untreated control were tested for efficacy of a direct application of 1 g product (0.0001 g deltamethrin/replicate of unknown size) against American and Oriental cockroaches. There were five replicates for both species and each replicate consisted of 5 cockroaches. Immediately after application, insects were moved to clean containers and observed for knockdown at 15 and 30 minutes after treatment. Mortality was assessed at 24 hours post treatment.

(3) **Results:** At 30 minutes post application 100% knockdown of both cockroach species was observed. At 24 hours post application, combined moribund and dead individuals of both cockroach species was 100%. There was no mortality in the untreated control group.

(4) **Conclusion: Unacceptable** because moribund and dead individuals are combined in the mortality count.

MRID 44974705. Evaluation of Esbiol/Deltamethrin and Deltamethrin CIKs against Lone Star Ticks.

(1) non-GLP

(2) **Methods:** In this study, a 0.01% deltamethrin water-based aerosol product, a 0.05% S-bioallethrin/0.02% deltamethrin product, and an untreated control were tested for efficacy against adult lone star ticks using a direct application sprayed until wet. There were three replicates with 7 individual ticks for each treatment. Immediately after application, ticks were moved to clean containers and observed for knockdown at 15 and 30 minutes after treatment. Mortality was assessed at 24 hours post treatment.

(3) **Results:** All ticks in the boxes treated with the 0.01% deltamethrin product were dead within 20 minutes of treatment and over 90% of ticks were dead in boxes treated with the 0.05 S-bioallethrin/0.02% deltamethrin product. No mortality was observed in the control treatment.

(4) **Conclusion:** This study is **unacceptable** because there was insufficient replication. Typically, a balanced study design is preferred, with at least 5 replicates of ten individuals each tested for both the treatments and the controls Additionally, for a tick claim data should be provided showing efficacy against brown dog tick or American dog tick and blacklegged tick in addition to lone star tick.

MRID 45069301. Performance of DeltaGard HPC and Ortho Home Defense against lone star ticks

(1) non-GLP

(2) **Methods:** This study tested the efficacy of a direct application of a 0.01% deltamethrin product, and a 0.05% bifenthrin product and an untreated control against lone star ticks. Ten lone star ticks were placed into 5 inch x 5 inch boxes, and five replications of ten ticks were sprayed per treatment. Products were applied directly to ticks at 1 g of product per replicate, equivalent to a rate of 0.57 g deltamethrin/1000 ft^2 for the tested deltamethrin product. Ticks were not moved to clean containers after treatment. The number of ticks alive was recorded at 10 minutes, 1 hr, 3 hrs and 24 hrs post-treatment.

(3) **Results:** All ticks were dead in both insecticide treatments within three hours of application. Mortality in the control treatment was less than 10%.

(4) **Conclusion:** This study is **acceptable** and direct contact kill efficacy against lone star ticks. For any tick claim, data should also be submitted to show efficacy against blacklegged ticks and either American dog or brown dog ticks.

MRID 45069302. Residual performance of DeltaGard HPC vs. commercial ready-to-use (RTU) products against German cockroaches on ceramic tile, unpainted plywood, concrete and cat fleas on carpet

(1) non-GLP

(2) **Methods:** The study design consisted of three replicates with ten cockroaches or cat fleas per replicate. This study tested the residual efficacy of 0.01%, 0.02%, and 0.03% formulations of Deltamethrin, a 0.25% formulation of permethrin, chlorpyrifos (0.20% and 0.50%), Bifenthrin (0.05%), and a 0.075% formulation of Diazinon against German cockroaches and cat fleas. A control treatment was included in the study, but was otherwise not described. The products were applied at 1 g/9 cm diameter circle to the ceramic tile, unpainted plywood, and concrete tile to test against German cockroaches and a carpet surface to test efficacy against cat fleas. German cockroaches were exposed monthly to treated surfaces for either 1 minute or 30 minutes starting one day post application through 12 months post application. Testing was done at 1, 2, 3, 4, 5, 6, 9 and 12 months post treatment. Cat fleas were placed in cups with treated fabric surfaces and exposed to surfaces for an unknown period of time. Mortality was recorded at 24 h post exposure for both cockroaches and fleas, and also at 4 days post exposure for cockroaches.

(3) **Results:** The 0.01%, 0.02%, and 0.03% deltamethrin treatments did not achieve 90% mortality through 6 months post application for fleas. However, at 9 months post application, mortality of fleas in the 0.01% deltamethrin treatment was 87% and in the 0.02% and 0.03% treatments flea mortality was 100%. At 12 months post application, mortality of fleas was again under 90% in the 0.01% and 0.02% deltamethrin treatments and was 92% in the 0.03% deltamethrin treatment. The 0.01% deltamethrin resulted in 100% mortality of German cockroaches 24 hrs after a 1 minute exposure on ceramic treated one month previously; after 30 minutes on concrete treated one month previously; and after 30 minutes on plywood treated one month previously. The 0.02% deltamethrin resulted in 100% mortality of German cockroaches 24 hrs after 1 minutes exposure to ceramic aged for one month; after 30 minutes on concrete aged for one month; and after 30 minutes on plywood aged for one month. The 0.01% and 0.02% deltamethrin resulted in >90% mortality at 24 hrs after 1 minute exposure to ceramic and 30 minutes exposure to concrete and plywood aged for 2 months. Treatment with 0.01% deltamethrin resulted in 100%

mortality of German cockroaches 24 hrs after a 1 minute exposure on ceramic treated 3 months previously and <90% mortality of German cockroaches exposed for 30 minutes to concrete or plywood aged 3 months. Treatment with 0.02% deltamethrin resulted in >90% mortality of German cockroaches 24 hrs after 1 minutes exposure to ceramic and 30 minutes exposure to concrete or plywood aged for 3 months. Mortality in the control treatment was 10% or less for both German cockroaches and flea for all test dates except months 4-6 for fleas when mortality in the control treatment was 20%.

(4) **Conclusion: Unacceptable.** This study does not support efficacy claims against fleas because efficacy was not over 90% except for a single occurrence at 9 months post application. For both fleas and cockroaches controls were not described and replication was insufficient. Typically, a balanced study design is preferred, with at least 5 replicates of ten individuals each tested for both the treatments and the controls.

MRID 45069303. Evaluation of DeltaGard HPC Applied as Deposit to Glass Plates against Adult *Aedes aegypti* Mosquitoes.

(1) non-GLP

(2) **Methods:** In this study, a 0.01% deltamethrin water-based aerosol product (application rate: 0.93 g deltamethrin/1000 ft), a positive control (EPA Reg. No. 4822-284), and an untreated control were tested for residual efficacy against adult *Aedes aegypti* mosquitoes. There were five replicates with 20 mosquitoes for each treatment. Within one hour of application, mosquitoes were exposed to treated glass plates for one minute and then transferred to clean containers and observed for knockdown and mortality at 5, 10, 30, and 60 minutes, and 24 hours after treatment.

(3) **Results:** Knockdown of mosquitoes was over 90% at 5 minutes post exposure in the 0.01% deltamethrin treatment and 10 minutes post exposure in the positive control treatment. Mortality of mosquitoes at 24 hours post exposure in both treatments was 100%, but mortality in the untreated control was 11.9% at 24 hours post treatment.

(4) **Conclusion: Unacceptable** because mortality of mosquitoes in the control treatment was over 10%.

MRID 45069304. Evaluation of DeltaGard HPC Applied as Deposit to Glass Plates against Nymphal *Ixodes scapularis* Ticks

(1) non-GLP

(2) **Methods:** In this study, a 0.01% deltamethrin water-based aerosol product (application rate: 0.93 g deltamethrin/1000 ft), a 0.05% bifenthrin product, and an untreated control were tested for residual efficacy against nymphal *Ixodes scapularis* ticks. There were five replicates with 10 ticks for each treatment. Within one hour of application, ticks were exposed to treated glass plates for one minute and then transferred to clean containers and observed for knockdown and mortality at 15, 30, and 60 minutes, and 24 hours after treatment.

(3) **Results:** All ticks exposed to plates treated with deltamethrin or bifenthrin were knocked down at 15 minutes post exposure and dead at 24 hours post exposure. Mortality of ticks in the control treatment at 24 hours post exposure was 12.2%.

(4) **Conclusion: Unacceptable.** This study does not support efficacy claims against ticks because mortality of ticks in the control treatment was over 10% and glass is not a representative surface for typical use of the subject product. Finally, adult ticks should be tested for any tick claim and testing should be done with lone star tick and either brown dog tick or American dog tick in addition to blacklegged tick.

MRID 45104203. Performance of Suspend SC, DeltaGard WP, DeltaGard WDG, DS505 (DeltaGard/Esbiol Aerosol) and DeltaGard HPC as Direct Sprays against the Stable Fly, *Stomoxys calcitrans*

(1) non-GLP

(2) **Methods:** This study tested three water-based 0.0025% deltamethrin products applied via a trigger sprayer at 2 gallons/1000 ft^2 (approx.: 0.023 g deltamethrin/1000 ft^2 assuming a density of 8 lb/gal), a 0.01% deltamethrin waterbased aerosol product (application rate: 1.47 g deltamethrin/1000 ft), several positive controls (0.025% cyfluthrin; 0.005% deltamethrin/0.05% s-bioallethrin/0.5% piperonyl butoxide; 0.143% d-grans allethrin/0.143% phenothrin/0.5% piperonyl butoxide; 0.05% bifenthrin), and an untreated control for efficacy of a direct application against stable flies. The experiment was performed five times with four replicates of 15 flies each time for a total of 300 flies per treatment. At one hour after application, flies were transferred to clean containers and observed for knockdown at 15 and 30 minutes post treatment, and mortality at 24 hours after treatment.

(3) **Results:** Knockdown was 100% at 15 minutes post application and mortality was also 100% at 24 hours post application in all deltamethrin treatments. Control mortality was less than 10%.

(4) **Conclusion:** This study is **unacceptable** because stable flies are not on the product label.

MRID 45137601. Direct Spray of American Cockroaches (*Periplaneta americana*) with 0.01% DeltaGard Home Pest Control (HPC) and 0.05% (Bifenthrin) Ortho's Home Defense Ready to Use (RTU)

(1) non-GLP

(2) **Methods:** This study tested the efficacy of a 0.01% deltamethrin RTU product (0.19 g deltamethrin/1000 ft^2), a 0.05% bifenthrin product (2.3 g bifenthrin/1000 ft^2), and an untreated control for efficacy of a direct application against American cockroaches. There were six replicates of five cockroaches each for the insecticide treatments and two replicates of ten cockroaches for the control treatment. Knockdown was observed for the first 15 minutes and at 30 and 60 minutes post application, and mortality was assessed at 24 hours post application. Insects were not moved to clean containers after treatment.

(3) **Results:** The deltamethrin product knocked down 100% of cockroaches within 15 minutes of application, and both treatments killed 100% of cockroaches at 24 hours post application. There was no control mortality.

(4) **Conclusion:** This study is **unacceptable** because individuals were not removed to untreated containers and were therefore exposed to treatment for 24 hrs, which is unrealistic in a real world scenario; insects should be removed to untreated containers no more than 4-hrs post-exposure.

MRID 45137602. Performance of 0.05% Esbiol/0.02% Deltamethrin and Deltamethrin against House Flies, Carpenter Ants, and House Crickets

(1) non-GLP

(2) **Methods:** In this study, a 0.01% deltamethrin water-based aerosol product (1 g product/replicate), a 0.05% Esbiol/0.02% deltamethrin product, and an untreated control were tested for efficacy of a direct application against house flies and carpenter ants. The number of replicates for each species and treatment is not provided. Flies were retained in the treated cups for the duration of the study, while ants were moved to clean containers immediately after application. For house flies, knockdown was assessed every 30 seconds, and for carpenter ant knockdown was assessed every minute. For both species mortality was assessed at 24 hours post application.

(3) **Results:** For house flies, the KT90 for the deltamethrin treatment was 8.1 minutes and for carpenter ants the KT90
was 6.5 minutes. Mortality for both species in both insecticide treatments was 100% at 24 hours post application. No control mortality was observed for either species.

(4) **Conclusion:** This study is **unacceptable** because the number of replicates used in the study was not provided, and flies were retained in the cup for 24 hours which is unrealistic. Insects should be moved to clean containers within 4 hrs post treatment.

MRID 45137603. 1991 Roussel Bio Corporation Treated Panel Research in Indiana for Controlling House Flies and Stable Flies

(1) non-GLP

(2) **Methods:** In this study, a 0.01% deltamethrin product, a 0.03% deltamethrin product, and two tralomethrin products were tested for residual efficacy against house flies and stable flies at a rate of 1 gallon product/1000 ft2. An untreated control group was included in the experiment. Treatments were applied to 12 x 12 inch plywood squares aged for two months. There were six replications of each treatment for each species. Each replicate consisted of 10 to 20 flies of a single species. Flies were exposed to treated panels for one hour. The study does not specify the timepoint after exposure when flies were observed for mortality. House flies were exposed to treated panels at 1, 2, 4, 8, 12, 16, and 20 weeks post application, and stable flies were exposed at 10, 13, and 18 weeks post application.

(3) **Results:** Both deltamethrin treatments killed 100% of both species of flies exposed to treated panels through 20 weeks post application for house flies and 18 weeks post application for stable flies. The 0.01% tralomethrin product did not provide 90% control until 8 weeks post application at which point mortality of both species was 100% through 20 weeks for house flies and 18 weeks for stable flies. The 0.03% tralomethrin product killed 100% of both fly species through the duration of the study. Control mortality was acceptable.

(4) **Conclusion:** This study is **unacceptable** because we do not know at what time post treatment the study staff assessed flies for mortality.

MRID 45430201. Laboratory Performance of Deltamethrin Formulations (WP, WDG, RTU, SC) Saga WP, Permanone Dust and Drione Dust against Adult, Free-Flying Yellow Jacket Wasps (*Vespula spp.*)

(1) non-GLP

(2) **Methods:** The study design consisted of five replicates with 10 yellowjackets per replicate. The number of controls used was not described. Several formulations were tested, including Drione Dust (1% pyrethrins, 10% piperonyl butoxide, 40% amorphous silica gel). Wasps were placed in steel can with a steel mesh bottom. Dust was applied using hand-held bulb dusters. Two or three squeezes of the bulb were directed into the steel cans. The amount of dust applied ranged from 0.2-0.7 grams. Knockdown was observed starting at one minute. Mortality was recorded at 24 hrs.

(3) **Results:** Treatment produced 100% morality at 24 hrs and 100% knockdown after 15 minutes. Control mortality was 8%.

(4) **Conclusion:** This study is **unacceptable** because the number of controls used was not described and insects were not moved to clean containers within 4 hrs post-treatment and were therefore exposed to treatment for 24 hrs, which is not realistic in a real world scenario. Additionally, knockdown claims for stinging hymenoptera should show >90% knockdown within 10 seconds of treatment.

MRID 47570901. *In Vitro* Efficacy Evaluations of UltraTec 5 SC MUP against selected Arthropod Pest Species.

(1) non-GLP

(2) **Methods:** The tests in this study evaluated the efficacy of a deltamethrin product diluted to 0.01% and sprayed at a rate of 2-3 g diluted product/replicate and an untreated control group against black widow spiders, hobo spiders, brown recluse spiders, *Polistes* wasps, black flies, and the Earl strain of bed bugs. The three spider species and *Polistes* wasps were sprayed with 3 g diluted product/replicate and the bed bugs and black flies were sprayed with 2 g diluted product/replicate. There were five replicates for each species per treatment. Replicates consisted of one spider, 5 *Polistes* wasps, or 5 black flies. The number of bed bugs per replicate was not provided. All species were transferred to clean containers at 5 minutes post application and observed for knockdown and mortality at 1, 5, 15,

30, 45, and 60 minutes and 2, 4, and 8 and 24 hours post treatment.

(3) **Results:** For arthropods treated with 0.01% deltamethrin, 90% or greater knockdown occurred at one minute post treatment of black flies, 5 minutes post treatment of brown recluse and hobo spiders, 15 minutes post treatment of black widow spiders, and 30 minutes post treatment of *Polistes* wasps. At 24 hours post application, the 0.01% deltamethrin treatment killed 100% of all arthropods tested. Raw data were not provided to confirm mortality in the control treatment or replication of bed bugs. Mortality of black flies in the control treatment was 16.8% at 8 hours post treatment. Mortality of hobo spiders in the control treatment was 25% at 60 minutes post treatment. Mortality of the other tested arthropods was less than 10% throughout the experiment.

(4) **Conclusion:** This study is **unacceptable** due to low replication. Typically, a balanced study design is preferred, with at least 5 replicates of ten individuals each tested for both the treatments and the controls. This study does not show efficacy against bed bugs because the number of bed bugs tested is not given, and control data were not provided for bed bugs.

MRID 48302901. *In vitro* Efficacy Evaluations of UltraTec 5 SC MUP against Selected Arthropod Pest Species.

(1) GLP

(2) **Methods:** The tests in this study evaluated the efficacy of a deltamethrin product diluted to 0.01% and sprayed at a rate of 1-3 g diluted product/replicate and an untreated control group against black widow spiders, hobo spiders, brown recluse spiders, *Polistes* wasps, black flies, and the Earl strain of bed bugs. A 0.05% dilution of deltamethrin applied at 1-3 g diluted product per replicate was also tested only against the *Polistes* wasps. Exact application rates for individual species and replicates were not given. There were five replicates for each species per treatment except the spider species. Replicates consisted of five bed bugs, 10 *Polistes* wasps, or 20 black flies. The three spider species were placed in cups individually and there were 25 individuals per species per treatment. All species were transferred to clean containers at 5 minutes post application and observed for knockdown at 5, 15, 30, 45, and 60 minutes and 2, and 4 hours post treatment. Arthropods were evaluated for mortality at 24 and 48 hours post application for the control and 0.01% deltamethrin dilution and through 96 hours for the 0.05% deltamethrin dilution.

(3) **Results:** In the 0.01% deltamethrin treatment, knockdown of *Polistes* wasps, black widow spiders, and black flies reached 90% at 30 minutes post application. Knockdown reached 90% for hobo spiders at 45 minutes post treatment, bed bugs at 1 hour after application, and brown recluse spiders at 2 hours post application. Mortality of bed bugs, black flies, and black widow spiders was over 90% at 24 hours post application. For brown recluse and hobo spiders mortality was over 90% at 48 hours post treatment. Mortality of *Polistes* wasps was only 8% at 48 hours in the 0.01% deltamethrin treatment, but the 0.05% deltamethrin treatment killed 95% of wasps at 96 hours post application. Mortality of all species in the control treatment was less than 10%.

(4) **Conclusion:** This study is **partially acceptable** and supports direct contact kill claims against black widow spiders, brown recluse spiders and black flies. Data shows efficacy against a laboratory strain of bed bugs, but tests should also show efficacy against field collected bed bugs. A balanced study design is preferred, with at least 5 replicates of ten individuals each tested for both the treatments and the controls. This study does not show efficacy against wasps at the 0.01% dilution of deltamethrin. This study does not support knockdown claims because 90% knockdown did not occur until 30 minutes post application. Also, bed bug replication was low.

MRID 48935601. Evaluation of Knockdown and Kill Efficacy of UltraTec D200 Insecticide as a Direct Spray against Pharaoh ants (*Monomorium pharanois*) and Harvester Ants (*Pogonomyrmex* sp.).

(1) non-GLP

(2) **Methods:** This study tested a direct spray of a liquid aerosol product at an approximate rate of 12.42 g

deltamethrin/1000 ft^2 (3 g test substance/pint mason jar) against pharaoh and harvester ants. The formulation tested was UltraTec D200 (0.02% deltamethrin). Ants were assessed for knockdown at 3, 6, 10, 20, 30, and 60 seconds and 2, 3, 4, and 5 minutes post application. At five minutes ants were transferred to clean containers and assessed for knockdown at 10, 20, 30 and 60 minutes, 2, and 4 hours, and mortality at 24, 48, and 72 hours post treatment. Each treatment was replicated four times with 13-20 individuals of each species.

(3) **Results:** Knockdown of treated pharaoh ants was 100% at 6 seconds post application, and mortality was 100% at 24 hours after application. Knockdown of treated harvester ants reached 94% at four minutes post application and mortality was 100% at 24 h after application. No mortality occurred in the control treatment.

(4) **Conclusion: Partially Acceptable.** This study supports direct contact kill claims against pharaoh and harvester ants for a direct application at 3 g product.

MRID 48935602. Evaluation of the Insecticidal Activity (Efficacy) of UltraTec 5 SC MUP (Deltamethrin 4.75%) Applied as a Direct Application Against Chiggers, Harvest Ants, Horse Flies, Deer Flies, and Biting Gnats/Midges Under Laboratory Conditions.

(1) non-GLP

(2) **Methods:** This study tested the efficacy of a direct application of a 4.75% deltamethrin product diluted to 0.01% deltamethrin against harvester ants, biting midges, chiggers, horse flies and deer flies. The diluted product was applied at 2 g diluted product/replicate to harvester ants, 2 g diluted product/replicate to chiggers (2.27 g deltamethrin/1000 ft^2), 2.5 g diluted product/replicate to horse flies and deer flies, and 1 g diluted product/replicate to biting midges. Each treatment was replicated five times, and each replicate consisted of 10 individuals for ants, 3 – 18 individuals for deer and horse flies, 15 midges, or 10 chiggers. Insects were held in the following containers for application: ants were sprayed in 8 oz. plastic cups; horse flies, deer flies, and biting midges were sprayed in squat 16 oz. plastic cups, and chiggers were sprayed in 100 x 15 mm petri dishes. At five minutes post application, all individuals of all species were transferred to clean containers and observed for knockdown at 5, 15, 30, 45, and 60 minutes and 2, and 4 hours post exposure and mortality at 24 hours post application. Raw data sheets were not provided.

(3) **Results:** Knockdown of all species except biting midges was over 90% within 5 minutes of application. Over 90% of biting midges were knocked down at 30 minutes post treatment. At 24 hours post application, 100% of all species were dead. Mortality of all species in the control treatment was less than 10%.

(4) **Conclusion: Partially Acceptable.** This study supports direct contact kill claims against harvester ants, biting midges and chiggers. Replication for horse flies and deer flies was described as having 3-18 individuals per replicate. Typically, a balanced study design is preferred, with at least 5 replicates of ten individuals each tested for both the treatments and the controls

MRID 48935603. Residual Efficacy of UltraTec D200 Crawling Insect Killer on Non-porous (ceramic tile) and porous (unpainted wood) surfaces against German Cockroaches, *Blatella germanica*, and American Cockroaches, *Periplaneta Americana*

(1) non-GLP

(2) **Methods:** This study tested the residual efficacy against German and American cockroaches of an application of approximately 2.4 g deltamethrin/1000 ft^2 (3 g product/tile with a 0.02% deltamethrin product) on ceramic tile and unpainted wood surfaces. Treatments groups consisted of 10 individuals replicated four times. German cockroaches were exposed to treated ceramic tiles for 5 minutes at 1 day, 1, 2, 3, 6, 9, 12, and 18 months post application and treated unpainted wood surfaces at 1 day and 1 month post application. American cockroaches were exposed for 5 minutes to treated ceramic tiles at 1 day, 3, 6, 9, 12, and 18 months post application and treated unpainted wood surfaces at 1 day and 3 months post application. Cockroaches were transferred to clean containers after a 5-minute exposure period and observed for knockdown at 15, 30, and 60 minutes post exposure. Mortality observations were conducted at 1 and 3 days post exposure.

(3) **Results:** Mortality of German cockroaches was over 90% on treated ceramic tiles for all observation dates except for 2 months and 18 months post application when mortality at 3 days post exposure was 67.5% and 85% respectively. Mortality of German cockroaches on treated unpainted wood surfaces was never higher than 5%. Mortality of American cockroaches was over 90% on treated ceramic tiles for all exposure periods through 18 months post application. Mortality of German cockroaches on treated unpainted wood surfaces was never over 80%. Control mortality was less than 10% for both species on all observation dates.

(4) **Conclusion:** This study is **partially acceptable.** For crack and crevice use patterns with directions of spray until wet, this study supports claims of kills German and American cockroaches and residual claims on non-porous surfaces for up to 12 months against German cockroaches and 18 months against American cockroaches. This study does not support claims of knockdown against cockroaches, because 90% knockdown must occur within 30 seconds of exposure. The study also does not support residual claims on porous surfaces such as wood or concrete.

MRID 48935604. Residual Efficacy of UltraTec D200 Crawling Insect Killer on Non-porous (ceramic tile) and porous (unpainted wood) surfaces against Argentine Ants, *Linepithema humile*

(1) **Methods:** This study tested the efficacy of a 0.02% deltamethrin product against argentine ants.

(2) **Conclusion: Extraneous**. The Agency does not require data to show efficacy against argentine ants, therefore, this study was not reviewed.

IV. EXECUTIVE DATA SUMMARY:

The data submitted supports direct contact kill claims against pharaoh, fire and harvester ants, black widow and brown recluse spiders, black flies, biting midge, chiggers, and cockroaches. Data supports residual surface claims for up to 30 days on non-porous surfaces against pharaoh and fire ants; and residual surface claims for up to 12 months for German cockroach and 18 months for American cockroach on non-porous surfaces. Data suggests efficacy against lone star tick. Data should be submitted showing efficacy against American dog or brown dog tick and blacklegged tick. Data suggests efficacy against bed bugs. Data should be submitted showing efficacy against a field collected strain.

V. LABEL RECOMMENDATIONS:

(1) Make the following changes in the Directions for Use:

- Delete directions for use against house flies, horse flies, deer flies, ants, carpenter ants, centipedes, fleas, ticks (including ticks which may carry Lyme disease), scorpions, bed bugs, gnats, wasps, ticks (including lone star ticks, deer ticks, blacklegged ticks), hornets, mosquitoes (ant DFU can remain if qualified by "except carpenter ants." Argentine ant claims are acceptable.)
- Delete DFU against organophosphate and carbamate resistant cockroach strains
- Qualify all DFU for spiders, black flies, biting midge and chiggers, to indicate arthropods must be directly sprayed with insecticide.
- Qualify all outdoor DFU against fire, pharaoh and harvester ants, cockroaches and spiders to indicate arthropods must be directly sprayed with insecticide
- Qualify all indoor residual DFU against cockroaches, pharaoh, harvester and fire ants to indicate that the product only works on non-porous surface.

(2) The following marketing claims are acceptable:

- Any claims against non-public health pests; note that all general claims should be modified to specify listed bugs
- Kills roaches – ants except carpenter ants – spiders
- Kills ants (except carpenter ants), beetles, cockroaches, spiders
- Keeps on killing German and American cockroaches and Argentine ants for up to 12 months [1 year] on non-porous surfaces

- Protects against German and American cockroaches and Argentine ants for up to 12 months [1 year] on non-porous surfaces
- Protects against [controls] German cockroaches for up to 12 weeks [3 months]
- Keeps on killing German cockroaches for up to 12 weeks [3 months]
- Kills spiders [black widow, hobo and brown recluse spiders]
- Kills ants [red imported fire ants, harvester ants, pharaoh ants]
- Keeps killing lady beetles for up to 35 days
- Kills Asian lady [bird] beetles
- Kills Asian lady bugs by contact
- UltraTec DP 205 works in two ways: 1) it kills the following bugs [pests, insects fast on contact: Argentine ants, Asian lady bird beetle (lady bugs), spiders (except black widow and brown recluse spiders), hobo spiders, boxelder bugs, crickets, beetles, firebrats, silverfish, sowbugs, ground beetles, pillbugs, beetles, moths, weevils [flour beetles (red and confused), grain beetles (rusty, merchant and saw-toothed), chocolate moths, Indian meal moths, angoumois grain moths, Mediterranean flour moths, cigarette beetles, drugstore beetles, rice weevils, lesser grain borers, spider beetles, grain mites, tobacco moths, carpet beetles (black, furniture and varied), dermestid beetles (hide, larder, leather), (webbing) clothes moths, earwigs; and 2) its residual action keeps on killing Argentine ants for up to 12 months (1 year) on non-porous surfaces
- Contains pyrethrins combined with deltamethrin to give rapid [flush-out and] knockdown with extended killing power of the following pests: Argentine ants, Asian lady bird beetle (lady bugs), spiders (except black widow and brown recluse spiders), hobo spiders, boxelder bugs, crickets, beetles, firebrats, silverfish, sowbugs, ground beetles, pillbugs, beetles, moths, weevils [flour beetles (red and confused), grain beetles (rusty, merchant and saw-toothed), chocolate moths, Indian meal moths, angoumois grain moths, Mediterranean flour moths, cigarette beetles, drugstore beetles, rice weevils, lesser grain borers, spider beetles, grain mites, tobacco moths, carpet beetles (black, furniture and varied), dermestid beetles (hide, larder, leather), (webbing) clothes moths, earwigs
- Pyrethrins rapidly [expels][flushes out] and knocks down the following bugs [roaches][insects] from cracks and crevices [their hiding places]: Argentine ants, Asian lady bird beetle (lady bugs), spiders (except black widow and brown recluse spiders), hobo spiders, boxelder bugs, crickets, beetles, firebrats, silverfish, sowbugs, ground beetles, pillbugs, beetles, moths, weevils [flour beetles (red and confused), grain beetles (rusty, merchant and saw-toothed), chocolate moths, Indian meal moths, angoumois grain moths, Mediterranean flour moths, cigarette beetles, drugstore beetles, rice weevils, lesser grain borers, spider beetles, grain mites, tobacco moths, carpet beetles (black, furniture and varied), dermestid beetles (hide, larder, leather), (webbing) clothes moths, earwigs
- Kills on contact the following insects: Argentine ants, Asian lady bird beetle (lady bugs), spiders (except black widow and brown recluse spiders), hobo spiders, boxelder bugs, crickets, beetles, firebrats, silverfish, sowbugs, ground beetles, pillbugs, beetles, moths, weevils [flour beetles (red and confused), grain beetles (rusty, merchant and saw-toothed), chocolate moths, Indian meal moths, angoumois grain moths, Mediterranean flour moths, cigarette beetles, drugstore beetles, rice weevils, lesser grain borers, spider beetles, grain mites, tobacco moths, carpet beetles (black, furniture and varied), dermestid beetles (hide, larder, leather), (webbing) clothes moths, earwigs
- Kills fast the following insects: Argentine ants, Asian lady bird beetle (lady bugs), spiders (except black widow and brown recluse spiders), hobo spiders, boxelder bugs, crickets, beetles, firebrats, silverfish, sowbugs, ground beetles, pillbugs, beetles, moths, weevils [flour beetles (red and confused), grain beetles (rusty, merchant and saw-toothed), chocolate moths, Indian meal moths, angoumois grain moths, Mediterranean flour moths, cigarette beetles, drugstore beetles, rice weevils, lesser grain borers, spider beetles, grain mites, tobacco moths, carpet beetles (black, furniture and varied), dermestid beetles (hide, larder, leather), (webbing) clothes moths, earwigs
- Fast knockdown formula for the following pests: Argentine ants, Asian lady bird beetle (lady bugs), spiders (except black widow and brown recluse spiders), hobo spiders, boxelder bugs, crickets, beetles, firebrats, silverfish, sowbugs, ground beetles, pillbugs, beetles, moths, weevils [flour beetles (red and confused), grain beetles (rusty, merchant and saw-toothed), chocolate moths, Indian meal moths, angoumois grain moths, Mediterranean flour moths, cigarette beetles, drugstore beetles, rice weevils, lesser grain borers, spider beetles, grain mites, tobacco moths, carpet beetles (black, furniture and varied), dermestid beetles (hide, larder, leather), (webbing) clothes moths, earwigs

- Kills the following hidden bugs: Argentine ants, Asian lady bird beetle (lady bugs), spiders (except black widow and brown recluse spiders), hobo spiders, boxelder bugs, crickets, beetles, firebrats, silverfish, sowbugs, ground beetles, pillbugs, beetles, moths, weevils [flour beetles (red and confused), grain beetles (rusty, merchant and saw-toothed), chocolate moths, Indian meal moths, angoumois grain moths, Mediterranean flour moths, cigarette beetles, drugstore beetles, rice weevils, lesser grain borers, spider beetles, grain mites, tobacco moths, carpet beetles (black, furniture and varied), dermestid beetles (hide, larder, leather), (webbing) clothes moths, earwigs
- Highly effective against the following pests in and around homes, recreational vehicles, cabins, tents and other recreational structures: Argentine ants, Asian lady bird beetle (lady bugs), spiders (except black widow and brown recluse spiders), hobo spiders, boxelder bugs, crickets, beetles, firebrats, silverfish, sowbugs, ground beetles, pillbugs, beetles, moths, weevils [flour beetles (red and confused), grain beetles (rusty, merchant and saw-toothed), chocolate moths, Indian meal moths, angoumois grain moths, Mediterranean flour moths, cigarette beetles, drugstore beetles, rice weevils, lesser grain borers, spider beetles, grain mites, tobacco moths, carpet beetles (black, furniture and varied), dermestid beetles (hide, larder, leather), (webbing) clothes moths, earwigs, pharaoh, fire and harvester ants, black widow and brown recluse spiders, black flies, biting midge, chiggers and cockroaches
- Kills by contact the following pests: Argentine ants, Asian lady bird beetle (lady bugs), spiders (except black widow and brown recluse spiders), hobo spiders, boxelder bugs, crickets, beetles, firebrats, silverfish, sowbugs, ground beetles, pillbugs, beetles, moths, weevils [flour beetles (red and confused), grain beetles (rusty, merchant and saw-toothed), chocolate moths, Indian meal moths, angoumois grain moths, Mediterranean flour moths, cigarette beetles, drugstore beetles, rice weevils, lesser grain borers, spider beetles, grain mites, tobacco moths, carpet beetles (black, furniture and varied), dermestid beetles (hide, larder, leather), (webbing) clothes moths, earwigs, pharaoh, fire and harvester ants, black widow and brown recluse spiders, black flies, biting midge, chiggers and cockroaches
- Broad spectrum insect control of cockroaches and ants (except carpenter ants)

(3) The following marketing claims are unacceptable:

- All marketing claims related to against house flies, horse flies, deer flies, ants, carpenter ants, centipedes, fleas, ticks (including ticks which may carry Lyme disease), scorpions, bed bugs, gnats, wasps, ticks (including lone star ticks, deer ticks, blacklegged ticks), hornets, mosquitoes (note that ant marketing claims may be retained if they are modified to include the species exclusions as described above)
- Kills carbamate and organophosphate resistant cockroaches
- Kills fleas
- Kills ticks (including lone star tick, deer ticks, blacklegged ticks)
- Kills ticks (including ticks which may carry Lyme disease)
- Kills ants, fleas, flies, mosquitoes, scorpions & ticks
- Keeps on killing for up to 12 months [1 years]
- Protects against [controls] houseflies for up to 12 weeks [3 months]
- Keeps on killing house flies for up to 12 weeks [3 months]
- Keeps on killing [controls] carpenter ants for up to 4 weeks [1 month]
- Kills ants [carpenter ants]
- Kills cat fleas
- Kills bed bugs
- UltraTec DP 205 works in two ways: 1) it kills bugs [pests, insects] fast on contact; and 2) its residual action keeps on killing house flies for up to 12 weeks (3 months) after you spray
- Contains pyrethrins combined with deltamethrin to give rapid [flush-out and] knockdown with extended killing power
- Pyrethrins rapidly [expels][flushes out] and knocks down bugs [roaches] [insects] from cracks and crevices [their hiding places]
- Kills on contact
- Kills fast
- Fast knockdown formula

- Kills hidden bugs
- Kills bugs you see and even the ones you don't see
- Broad spectrum insect control
- Highly effective against labeled pests in and around homes, recreational vehicles, cabins, tents and other recreational structures
- Kills by contact

(4) The following MRIDs should be removed from the data matrix, as they are classified as "unacceptable" to support the product: 44858201 44858202 44858203 44874701 44874702 44874703 44874705 44874708 44878001 44878502 44974704 44974705 45069302 45069303 45069304 45104203 45137601 45137602 45137603 45430201 47570901 48935604 46709501

(5) Note to PM: Data was submitted for the following pests not on the product label: stable flies, termites. Data was not submitted for the following pests on the product label: organophosphate and carbamate resistant strains of American and German cockroaches, gnats